

HUMER KWER HEALTH CENTER  
SULAYMANIYAH, IRAQ

SUSTAINMENT ASSESSMENT

**SIGIR PA-09-186**  
**APRIL 20, 2010**

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# SIGIR

Special Inspector General for IRAQ Reconstruction

## Summary of Report: PA-09-186

### Why SIGIR Did this Study

SIGIR is charged to conduct assessments of Iraq reconstruction projects funded with amounts appropriated or made available by the U.S. Congress. SIGIR assessed this project to provide real-time information on relief and reconstruction to interested parties to enable appropriate action, when warranted.

The objective of this sustainment assessment was to determine whether the project is operating at the capacity stated in the original contract. To accomplish the objective, the assessment team determined whether the project was at full capability or capacity when accepted by the U.S. government, when transferred to Iraqi operators, and during the site inspection.

### What SIGIR Recommends

SIGIR recommends that the Gulf Region District require the contractor to:

1. Install handrails on the staircase.
2. Secure the fire extinguishers and the pressurized gas cylinder
3. Fix the leaking fuel tank.

### Management Comments

SIGIR received United States Forces-Iraq (USF-I) approved comments from the Gulf Region District of the U.S. Army Corps of Engineers on the draft of this report generally agreeing with the facts presented, concurring with the recommendations, and noting that corrective action had been taken or was in progress. The complete texts of the comments are provided in Appendix C.

### Evaluation of Comments

SIGIR appreciates the concurrence by USF-I and GRD with the recommendations as well as GRD's prompt corrective actions. As a result, no additional comments are required.

For more information, contact SIGIR Public Affairs at (703) 428-1100 or [PublicAffairs@sigir.mil](mailto:PublicAffairs@sigir.mil)

April 20, 2010

## Humer Kwer Health Center

### What SIGIR Found

The overall objective of this \$0.5 million Economic Support Fund project was to construct a new 650-square-meter multi-level health center in the Humer Kwer district of Sulaymaniyah, Iraq. The project consisted of the complete design and new construction of the health center. This health center is intended to serve a population of 60,000 from the surrounding area.

The Statement of Work required the contractor to prepare the site and construct the building, to include doctors' offices, patient rooms, an X-ray room, administrative office, pharmacy, and handicapped-accessible ramps and restrooms.

On 31 May 2009, the Kirkuk Area Office of the U.S. Army Corps of Engineer's Gulf Region District North officially turned over the Humer Kwer Health Center project to the Government of Iraq's Director General of Health. The acceptance letter noted that the contractor turned over, and the Director General of Health received, the as-built drawings and the operation and maintenance manuals.

Before the site visit, SIGIR reviewed the design submittals for the project and found that the design documentation appeared adequate.

On 23 August 2009, SIGIR conducted an on-site assessment of the Humer Kwer Health Center project. The Humer Kwer Health Center had been operational since May 2009 and patients were being seen at the time of the assessment.

The site visit identified some issues, such as fire extinguishers placed on the floor in common hallways; a pressurized gas cylinder accessible to the public; no handrails present in the stairway; and a leaking fuel tank. SIGIR concluded that the construction of the Humer Kwer Health Center project was adequate and was being utilized as intended.





## SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

April 20, 2010

MEMORANDUM FOR COMMANDING GENERAL, UNITED STATES CENTRAL  
COMMAND  
COMMANDING GENERAL, UNITED STATES FORCES-  
IRAQ  
COMMANDING GENERAL, JOINT CONTRACTING  
COMMAND-IRAQ/AFGHANISTAN  
DIRECTOR, IRAQ TRANSITION ASSISTANCE OFFICE

SUBJECT: Report on the Humer Kwer Health Center Sulaymaniyah, Iraq  
(SIGIR Report Number PA-09-186)

We are providing this report for your information and use. It addresses the current status of construction of the Humer Kwer Health Center in Sulaymaniyah, Iraq. The assessment was made to determine whether the project was operating at the capacity stated in the original contract.

We received United States Forces-Iraq approved comments from the Gulf Region District of the U.S. Army Corps of Engineers on the draft of this report generally agreeing with the facts presented, concurring with the recommendations, and noting that corrective action had been taken or was in progress. SIGIR appreciates the concurrence with the recommendations as well as the prompt corrective actions. As a result, no additional comments are required.

We appreciate the courtesies extended to our staff by the United States Forces-Iraq and the offices of the Gulf Region District of the U.S. Army Corps of Engineers. If you have any questions please contact Mr. Brian M. Flynn at [brian.flynn@sigir.mil](mailto:brian.flynn@sigir.mil) or at 240-553-0581, extension 2485. For public queries concerning this report, please contact SIGIR Public Affairs at [publicaffairs@sigir.mil](mailto:publicaffairs@sigir.mil) or at 703-428-1100.

A handwritten signature in black ink, appearing to read "Stuart W. Bowen Jr." followed by a period.

Stuart W. Bowen, Jr.  
Inspector General

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# **Introduction**

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## **Objective of the Project Assessment**

The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties to enable appropriate action to be taken, when warranted. Specifically, the Special Inspector General for Iraq Reconstruction (SIGIR) determined whether the project was operating at the capacity stated in the original contract. To accomplish this, SIGIR determined whether the project was at full capability or capacity when accepted by the U.S. government, when it was transferred to Iraqi operators, and during SIGIR's on-site inspection.

## **Pre-Site Assessment Background**

### **Contract, Costs and Payments**

On 25 March 2008, the Gulf Region Division, Northern District (GRN)<sup>1</sup> awarded Contract W917BE-08-C-0045, a firm-fixed-price contract funded by the Economic Support Fund to a local contractor in the amount of \$541,907. The contract contained one modification.

P00001, dated 29 October 2008, increased the total contract cost by \$5,350 from \$541,907 to \$547,257. The modification added additional funds to cover extra labor and equipment costs incurred by extending the contract completion date.

The contractor received the Notice to Proceed on 26 March 2008. The contract called for the completion of the project within 330 days from the receipt of the Notice to Proceed.

### **Project Objective and Pre-Construction Description**

The overall project objective was to design and construct a new 650 square meter ( $m^2$ ) health center in the Humer Kwer district of Sulaymaniyah, Iraq.

The description of the facility (pre-construction) is based on information that SIGIR obtained from reviewing the contract and related documentation and discussions

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<sup>1</sup> Formerly, the U.S. Army Corp of Engineers (USACE) organization in Iraq consisted of the Gulf Region Division under which were the Gulf Region District North (GRN), Gulf Region District Central (GRC), and Gulf Region District South (GRS). Each of the Districts had local area, resident and project offices. The designation of a local office as an area, resident or project office depended on the number of reconstruction projects that it was responsible for overseeing.

Since July 2009, the USACE in Iraq has been undergoing reorganization to downsize as the number of reconstruction projects has diminished. The Gulf Region Division was disestablished. GRN, GRC, and GRS were combined to form the Gulf Region District. The reduced number of reconstruction projects has also resulted in the closing or reduction in size of many of the local area, resident and project offices. The local offices that have been reduced in size have had their designations changed from area offices to resident or project offices.

In the body of this report, the names of USACE organizations at the time of the actions cited are used. Recommendations are directed to the current designations of the organizations able to take corrective action.

with GRN Kirkuk Area Office (KAO) personnel. The project site was vacant land, located in a residential area of Sulaymaniyah (Site Photo 1). The project terrain is relatively steep with a uniform slope from the primary access road at the higher end of the project site to a minor access drive at the lower end of the project site. During the site assessment, the GRN KAO local national engineer stated that the facility serves a population of 60,000 people from the surrounding area.



**Site Photo 1. Initial excavation of project site**

### **Statement of Work**

The Statement of Work (SOW) required the contractor to complete the design and construct a health center for Humer Kwer. Specifically, the contract required the following:

- site preparation and layout
- civil works
  - excavation
  - construction of the building
    - three doctor offices
    - two patient rooms
    - one x-ray room
    - laboratory
    - administrative office
    - pharmacy
    - handicap accessible ramps and restrooms
- electrical works
  - installation
  - distribution
  - connection to local electrical grid
- mechanical works
  - mechanical and plumbing installation for the building
  - connection to the local water utility system

### **Current Project Design and Specifications**

The GRN KAO provided the contractor with a set of contract design drawings and specifications. The contractor was to review the design drawings furnished and the

original contract specifications before laying out the work. If any discrepancies were noted, the contractor was to notify the contracting officer. Upon award of the contract, the contractor was required to complete the design and provide details where design details were not identified.

The contractor was required to design the project in accordance with international building codes. Also, the contract required the work to conform to the following codes and standards:

- Iraqi General Technical Specifications
- International Existing Building Code
- International Mechanical Code
- International Electromechanical Commission
- International Plumbing Code
- International Fire Code
- National Fire Prevention Agency
- Sheet Metal and Air Conditioning Contractor's National Society
- Underwriter's Laboratories
- American Society of Mechanical Engineers
- American Society of Heating Refrigeration and Air Conditioning Engineers

The GRN KAO provided SIGIR with the design documents for the project. The conceptual drawings<sup>2</sup>, specifications, and technical requirements were supplied by GRN as part of the contract. The actual design drawings<sup>3</sup> and submittals were provided by the contractor to GRN. The conceptual design documents supplied by GRN contained information conveying the scope and intent of the project. The contractor-submitted construction drawings appeared complete, containing information regarding the site development, building structure, architectural layout, utilities, and other project details.

#### Site Layout

A site plan was included with the conceptual drawings provided by GRN. The conceptual site plan indicated a small contiguous building footprint with an adjacent parking area and sunshade within a 3,000 square meter area. In addition, a perimeter security wall, guardhouse, and generator building were indicated on the conceptual site plan. All required utilities were proposed as part of the project, including an auxiliary diesel generator.

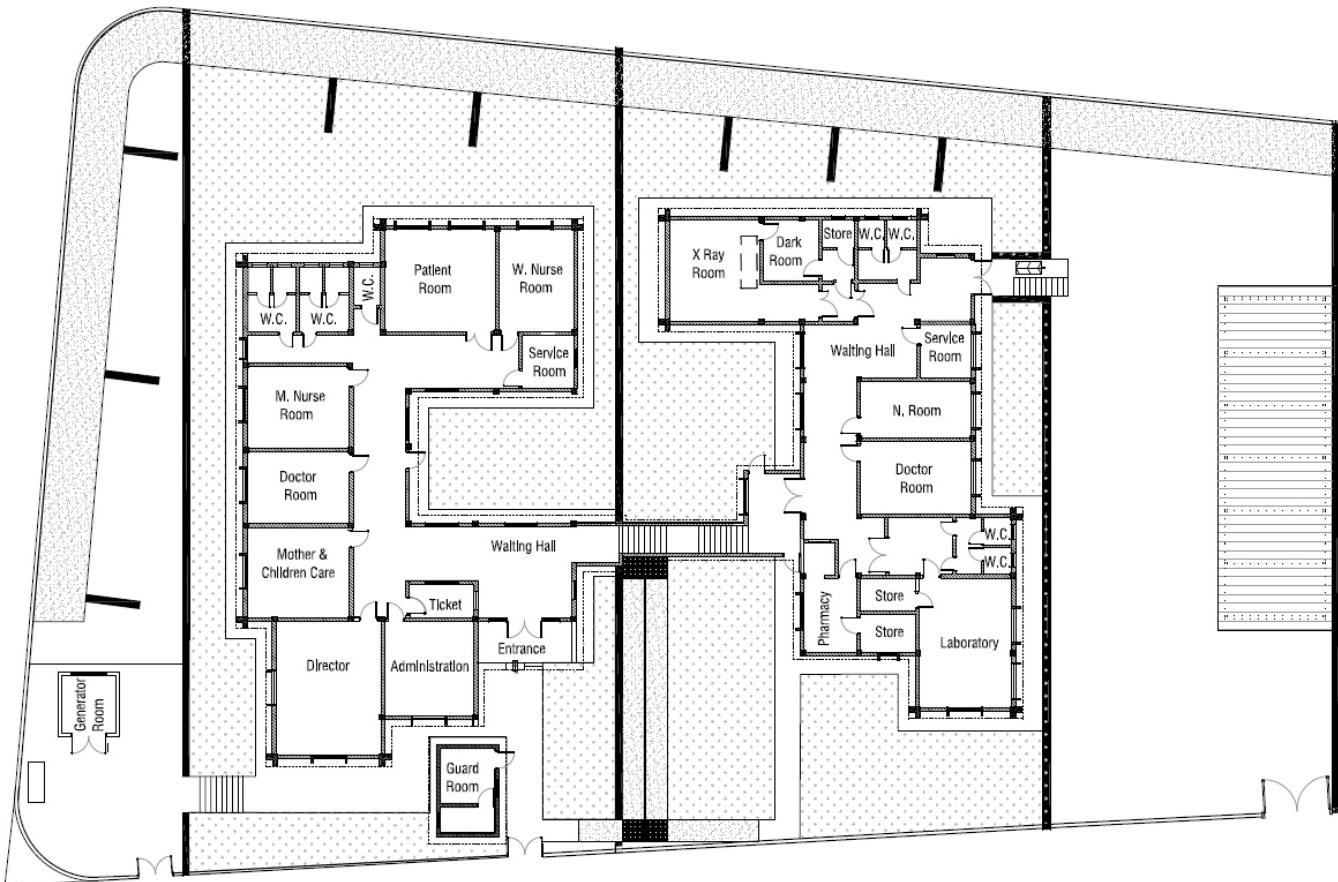
Actual construction plans differed from the conceptual site plan. The conceptual site plan was developed without the benefit of accurate topographic information for the project. Elevations shown on the conceptual site plan indicated a proposed level pad for the building and parking with only 0.20 meters of elevation change across the site. The contractor performed a topographic survey of the site to determine the actual site elevation differential. Based on the topographic survey, the actual differential in elevation across the site is approximately 18 meters. The contractor's site plan indicated the use of retaining walls to terrace the site. The building was shown on two separate levels with parking on a third level. The contractor's site plan shows the project construction within a 3,000 square meter area (Figure 1).

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<sup>2</sup> Per the contract, the conceptual drawings referred to throughout the "Current Project Design and Specification" section were supplied by GRN to the contractor.

<sup>3</sup> The contractor accepted the conceptual designs, provided by GRN, and provided actual drawings to GRN for review and approval prior to the construction of the project. The contractor's drawings are referred to throughout the "Current Project Design and Specification" section as the actual design drawings.

An exterior ramp is shown connecting the upper and lower levels of the building. The ramp is fairly long, and contains one intermediate landing. The design slope for the ramp is 10%. This is a difficult grade for handicapped individuals to traverse.



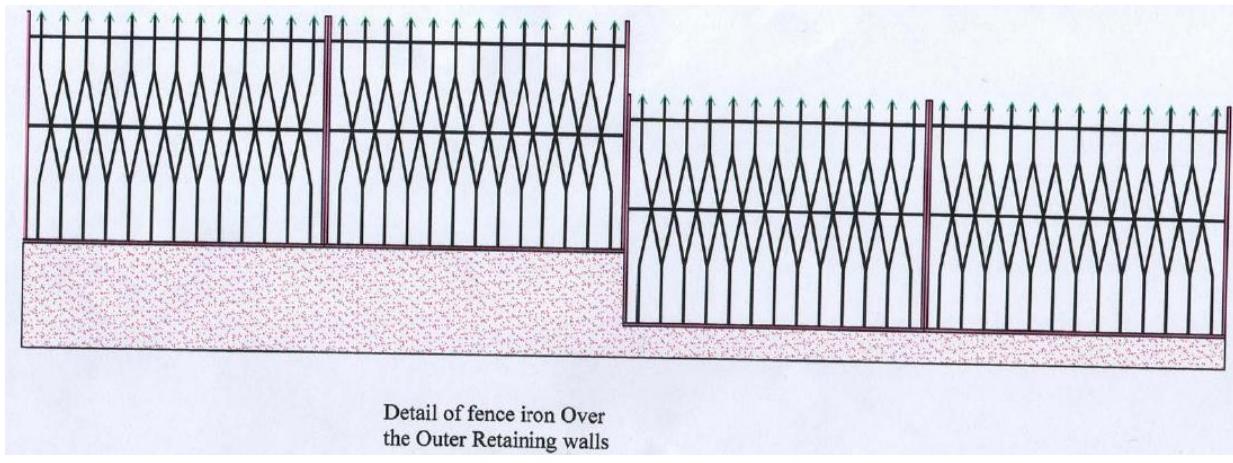
**Figure 1. Humer Kwer Health Center project site plan  
(Courtesy of GRN)**

#### Perimeter Security Wall

The perimeter security wall details provided with the conceptual design drawings included details for the concrete masonry unit<sup>4</sup> (CMU) wall, foundation, and reinforcement for the gates and is identical on the contractor's drawings. In several areas the need for a retaining wall precludes the construction of a CMU security wall. In these areas, the contractor proposed a steel fence mounted to the top of the retaining wall (Figure 2).

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<sup>4</sup> A concrete masonry unit, also called concrete block, cement block, or foundation block, is a large rectangular brick used in construction.



**Figure 2. Steel fence secured to retaining wall**  
(Courtesy of GRN)

#### Guard Building

The contractor's detailed architectural plans for the guard building were identical to the conceptual plans included with the contract. The plans show the guard building with a small interior space for general use and an interior latrine. The general use space is accessed by a door opening toward the main gate. Also, a window provides visibility for the guard to view the main entry.

#### Parking and Sunshade

The conceptual drawings included detailed information regarding the sunshade for the parking area. The contractor's design drawings appear to be identical to the conceptual drawings. The sunshade was designed as a steel framed structure with corrugated metal roofing. No design calculations were included with the information provided by GRN; therefore, SIGIR could not determine if the framing for the sunshade was properly sized to accommodate the seasonal weight of snow.

#### Structural Building Plan

A slab reinforcing plan with details was included with the GRN-provided conceptual drawings. However, there were no apparent details for the foundation, reinforced concrete columns, reinforced concrete beams, or lentsils. Since the conceptual plans did not account for the significant difference in grade across the site, the structural plans provided as part of the conceptual drawings were significantly different from the actual construction plans. Any information provided on the conceptual plans would have been of little use to the contractor. The contractor provided detailed structural plans for the project and unlike the conceptual plans, the contractor's plans were developed specifically for the site and account for the significant grade change.

#### Building Foundation

The contractor's design plans did include foundation plans and details for the proposed structure. The foundations appear designed to accommodate the relatively light loading of the structure. Slab reinforcing plans contained specific details and the proposed foundation consisted of shallow spread footings with tie beams to support the floor slab and CMU walls.

### *Reinforced Concrete Framing*

The contractor included reinforced concrete beam details and reinforced concrete slab plans with the design drawings. The beam details included information for constructing the reinforced concrete beams and also included the overall beam dimensions and reinforcing quantity, size, and location.

The beam details were designated on the plan by beam mark numbers. Mark numbers are typically used to correlate the details to their location on the framing plan. Mark numbers were evident on the reinforced concrete slab plans and corresponded to the appropriate details.

The reinforced concrete slab plans contained significant details regarding the slab thickness, configuration, and reinforcement. The plans indicated overall slab dimensions including edge contour and interior slab penetrations. Slab thickness was indicated as uniform for the entire floor, which provided a simple design without the need for complex formwork. The reinforcement was detailed on the drawings.

The reinforced concrete framing generally appeared designed to carry the anticipated loads. The beams appeared sized for gravity (vertical) loads and have a typical configuration. However, GRN did not provide the design calculations for the reinforced concrete beams and columns.

### *Architectural Plan*

The contractor's design drawings included detailed architectural floor plans, building sections, and elevation views. The floor plans were well-planned and complete—detailing room use, floor dimensions, room finishes and door/window schedules. Elevations and building sections were provided and indicated details for construction.

### *Electrical Works - Generator*

The contractor's drawing included details for the proposed generator building. In addition, the plans showed the wiring diagram for the main distribution panel, utility connection to the power grid, and method of grounding the electrical system.

The generator building included an isolated room for the generator and switchgear, a smaller room for the main distribution panel and wiring, and a third room for storage or auxiliary use. No calculations were provided and the adequacy of the wiring, main distribution panel, and generation equipment could not be verified.

### *Mechanical Works - Potable Water*

Water distribution system drawings were included with the conceptual drawings and provided to the contractor. The distribution system design shows separated hot and cold water distribution systems with connections to all fixtures in the facility. The water system was designed to accommodate the intermittent flows from the municipal system. In order to accommodate occasional loss of service, rooftop storage tanks were proposed. Excess potable water would be stored in the tanks and used when the municipal supply was not available.

The potable water storage tanks conceptual drawings indicated that the tanks should be raised above the surface of the roof and the contractor's design drawings were identical. The details included features that would provide access to completely

drain the tanks. The raised tanks will help prevent the onset of corrosion caused by moisture being trapped between the tank bottom and the roof.

Potable water treatment facilities were not part of the project. Based on information provided by the local national engineer, the water supplied to the facility passed laboratory testing for potable water requirements.

#### Sanitary Sewer

The conceptual drawings indicated that the project would use a pumped septic tank system for septic waste disposal. A municipal sewer system was present at the project location. Municipal sewer lines run along the street on the north side of the compound. The contractor's drawings proposed to tie into this system and eliminate the need for a pumped septic tank system.

The proposed on-site sewer collection system is a dual system to accommodate the significant difference in grade from the upper and lower level. As a result, the upper and lower levels each have independent collection and conveyance systems and independent connections to the municipal sewer line on the west side of the compound. The sanitary sewer collection and conveyance system was designed with manholes to accommodate all changes in direction and appeared to be able to accommodate grade and other site conditions.

The contractor's drawings showed a dilution tank as part of the sanitary sewer system. It appeared that the purpose of this dilution tank is to reduce the pH level (amount of acidity) in the waste discharged from the medical laboratory. A ¾ inch diameter potable water line is shown at the exterior of the laboratory and it appeared that this water line would connect to the dilution tank. No additional details were provided on the contractor's drawings to indicate the type of connection from the potable waterline to the dilution tank.

Based on SIGIR's review of the documentation provided by the GRN KAO, the contract included detailed requirements and specification that adequately instructed the contractor on how to design and construct the facility. The contractor provided the design drawings to GRN for review and approval. The final design drawings and specifications provided by the contractor contained specific information for construction of the facility. The plans contained adequate detail to construct the project. SIGIR determined that the architectural, structural, electrical, and plumbing design drawings, with the inclusion of the calculations and design submittals, were adequate to construct the facility.

## Site Progress During Construction

Department of the Army Engineering Regulation (ER) 1180-1-6, dated 30 September 1995, provides general policy and guidance for establishing quality management procedures in the execution of construction contracts. According to ER 1180-1-6, "...obtaining quality construction is a combined responsibility of the construction contractor and the government."

The contract required the contractor to maintain an adequate inspection system and perform inspections, which ensured that work performed under the contract conformed to contract requirements. In addition, the contractor was to maintain complete inspection records.

The contractor provided daily construction reports that documented quality control, including photographs and work activities performed. In addition, the GRN KAO documented construction progress via quality assurance reports and photographs taken during visits to the site. SIGIR reviewed and subsequently relied on selected photographs to document examples of construction performance before the project was turned over to the Iraqi Director General of Health on 31 May 2009.

Before new construction could begin, the contractor cleared and excavated the project area. Site Photo 2 shows the obstructed future site of the Humer Kwer Health Center, with debris that required removal, and Site Photo 3 shows the site after the contractor excavated and cleared the area.



Site Photo 2. Site layout before modification (Courtesy of GRN) Site Photo 3. Site after excavation (Courtesy of GRN)

## Condition at Turnover

According to GRN documentation, authorized GRN KAO personnel conducted a final inspection on 10 May 2009. The final inspection report was written and photographs taken to document the condition of the project. GRN closeout documentation concluded that the work required by this contract was “*...inspected, and is accepted as being in accordance with the contract requirements.*”

To establish a consistent transfer of projects to the Iraqi ministries, GRN established a turnover checklist with multiple documents that were signed by authorized GRN personnel, the contractor, and representatives from the Iraqi Ministry of Health accepting the project including:

- a Memorandum for Record signed by all three parties certifying that the work was inspected and accepted in accordance with contract requirements
- receipt of all required documentation

On 31 May 2009, the GRN KAO turned over the Humer Kwer Health Center project to the Director General of Health. The contractor, a GRN KAO representative, and the Director General of Health signed a Memorandum for Record stating:

*“This document certifies that all work has been inspected, and is accepted as being in accordance with the contract requirements. Construction at this facility is*

*complete and no other work is to be performed as part of this contract unless noted below.”*

The acceptance letter also noted that the contractor turned over, and the Director General of Health received, the as-built drawings and operations and maintenance (O&M) manuals.

GRN documentation stated that the warranty period for this project expires on 9 June 2010.

## Site Assessment

On 23 August 2009, SIGIR, accompanied by a GRN KAO representative, performed an on-site assessment of the Humer Kwer Health Center project. Due to scheduling, the total time available on site was approximately 90 minutes. This afforded the SIGIR assessment team with the ability to collect information for a representative sample of the overall project. Consequently, a complete review of all the work at the project site was not possible.

### General Site Description

The Humer Kwer Health Center project is located in a recently developed section of Sulaymaniyah. The general topography of the area is moderately steep with the majority of new residential development occurring on the hillsides surrounding the city center (Site Photo 4). Public utilities were available at the project site and included potable water, sanitary sewer, and electricity.



**Site Photo 4. Surrounding residential development**

The project site is rectangular in shape, surrounded on all four sides by public roads. The site slopes significantly along its length with a change in grade of approximately 18 meters. Retaining walls were used extensively to develop the site into several level areas for building pads and parking. The building was constructed on two different levels to accommodate the change in grade. Ramps and stairs were incorporated to permit access to both levels of the facility.

The contractor constructed a perimeter security wall on two sides of the facility. The remaining two sides were enclosed with a security fence atop the perimeter retaining wall

(Site Photo 5). The security wall appeared to be constructed plumb and level, and was stepped to accommodate the steep grade. The wall appeared sound with no apparent cracking or settlement. Three entry points to the facility were constructed with locking steel gates placed at each opening.



**Site Photo 5. Security fence atop perimeter wall**

*Upper Level - Exam and Administration*

The facility contained three entry points, a primary entry point to the upper level with a secondary entry at the generator's location, and an auxiliary entry point at the lower level. The upper level entry is the primary entrance for patients and is identified with signs, and included a sign indicating the U.S. government's involvement with the project (Site Photo 6).



**Site Photo 6. Entrance sign**

Upon entry to the health center is a small waiting area (Site Photo 7) and a registration window for incoming patients. The waiting area was furnished with chairs, which were

included as part of the contract. The health center was open at the time of the site visit and several patients were waiting to be seen by the attending physicians.



**Site Photo 7. Patient waiting area**

The administrator's office is on the upper level of the facility. As required, the contractor provided furniture and equipment for the office. At the time of the site assessment, the furnishings were present and the area appeared clean and maintained.

Educational posters were placed throughout the facility to promote awareness of public health issues (Site Photo 8).



**Site Photo 8. Health education poster in Humer Kwer Health Center**

Patient exam rooms are located on the upper level of the facility (Site Photo 9). The contractor provided some furniture for the exam rooms and the Ministry of Health provided the medical equipment.



**Site Photo 9. Patient exam room**

The upper level contained both conventional and physically-challenged accessible restrooms. The restrooms' construction quality appeared good with no cracked, loose, or missing tile (Site Photo 10). All fixtures and grab bars were firmly attached to the structure. At the time of the site assessment, the restrooms were functioning and relatively clean.



**Site Photo 10. Accessible restroom**

The contractor installed water heaters for the lavatories. To facilitate future removal and replacement of the water heaters, the contractor installed union fittings<sup>5</sup> on both the supply and outlet lines and a shutoff valve on the water supply line.

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<sup>5</sup> A union fitting is a device for joining or coupling pipes.

Wiring for the water heaters was placed in wire molding along the wall and draped to the connection at the appliance. The contractor plumbed all of the waterlines with polyvinyl chloride (PVC) pipe.

Fire extinguishers were placed on the floor in several areas throughout the building in common hallways and they could easily be kicked or tripped over (Site Photo 11).

The SIGIR inspection team noted that a pressurized gas cylinder was on a gurney in one of the hallways (Site Photo 12). The cylinder was accessible to the public and was susceptible to tampering. Pressurized gas cylinders should be secured to prevent accidents.



Site Photo 11. Fire extinguisher on main hallway floor



Site Photo 12. Accessible pressurized gas cylinder storage

The contractor constructed reinforced concrete stairs to connect the upper and lower levels (Site Photo 13). The steps appeared to be level and even with consistent risers and tread widths. No apparent cracks or signs of settlement or distress were observed. Handrails were not present in the stairway. Handrails could prevent injury in the event of individuals tripping or losing their footing on the steps.



Site Photo 13. Interior stairs connecting upper and lower levels

### Lower Level - Diagnostics and Medical Imaging

The diagnostic facilities and pharmacy are located on the lower level. The diagnostic facilities included an X-ray room, darkroom, and medical laboratory. The X-ray room appeared finished, but was lacking X-ray equipment. The local national project engineer stated that the X-ray equipment was awaiting transfer to the health center. The contractor installed a moveable barrier to protect the X-ray technician and extended the electrical line through the floor to be connected to the X-ray equipment (Site Photo 14). The pharmacy appeared secure, stocked, and able to dispense medication. The supplies were neatly organized on shelves.



**Site Photo 14. X-ray room**

The contractor provided the required furniture for the laboratory. SIGIR noted that the Ministry of Health equipped the laboratory with diagnostic equipment—including a microscope, centrifuge, and reagents for performing various tests.

### Exterior Construction

The geometry of the facility created a small outside area at the elevation of the lower level that was made into a courtyard and contained a perimeter sidewalk with interior plantings. Runoff from a portion of the roof was discharged into the interior plantings to promote plant growth and groundwater recharge (Site Photo 15).



**Site Photo 15. Interior courtyard**

To create level pads for the building, retaining walls were used extensively throughout the site. The smaller, interior walls were included in the project's contract, while the high perimeter retaining wall was funded by the local government.

At the time of the site assessment, the interior retaining walls appeared plumb and level with no apparent cracking or bulging. The contractor installed PVC weep holes<sup>6</sup> in the wall at regular intervals to drain the backfill and prevent hydrostatic pressure from building up behind the wall. It was also noted that expansion joints were constructed in the wall.

The walls comprised unreinforced CMU, and although this is not a typical method for constructing retaining walls, there were no apparent failures.

Retaining walls were also incorporated into the construction of an exterior ramp connecting the upper and lower levels. The ramp appeared well-constructed with no significant cracking or settlement. A handrail was attached on one side of the ramp along the entire length. The facility is handicapped accessible as required by the contract, though the length of the ramp and limited number of intermediate landings appear to preclude unassisted access by individuals in wheelchairs.

The perimeter retaining walls, funded by the local government, appeared constructed with reinforced concrete. The contractor installed PVC weep holes in the walls at regular intervals to drain the backfill and prevent hydrostatic pressures from building up behind the walls. The surface of the walls exhibited some segregation of the concrete and moderate honeycombing was evident in places. It appeared that the contractor had used threaded rod to secure the formwork. However, these rods had become embedded in the walls. The rods were left in place and protruded from the concrete.

Adjacent to the lower level of the facility is a concrete slab parking area with sunshades for some of the parking spaces. The sunshades were constructed with steel members and corrugated metal roofing. At the time of the site assessment, there were no noticeable defects with the parking slab or sunshades.

### Utilities

The Humer Kwer Health Center facility is served by public water and sewer. Since public water is only available several days a week, the rooftop storage tanks help provide a consistent water supply to the facility (Site Photo 16).

The storage tanks appear relatively small compared to the size of the facility. SIGIR inspection teams have reviewed other Iraqi primary healthcare centers with significantly larger potable water storage tanks. Since usage requirements were not provided and the exact amount of potable water available from the municipal system was not provided, the adequacy of the potable water storage could not be determined.

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<sup>6</sup> Weep holes are small openings left in the outer wall of masonry construction as an outlet for water inside a building to move outside the wall and evaporate.



**Site Photo 16. Roof tank and piping**

Piping to the tanks appeared to consist of PVC with fiberglass insulating wrap. A GRN KAO representative informed SIGIR that the winter temperatures can fall below freezing, and bursting pipes was an issue on other projects in the region. The insulation on the pipes will provide some measure of protection against freezing. However, since the tank is not insulated, freezing could occur near the various apertures and cause pipe breakage at the tank/pipe interface.

#### Electricity

The health center's main power supply is from the national grid. A connection was made from the grid to the facility through a meter and automatic transfer switch. In addition to the national grid, the contractor supplied a diesel generator that provides auxiliary power. The generator was housed in a small, exterior building that contained a second room for the operator. The generator was fueled from an exterior fuel tank, and the contractor used welded-steel piping to convey exhaust from the building.

SIGIR noted that the fuel tank was leaking in two locations (Site Photo 17). Due to the limited time on site, the source of the leak could not be determined. However, if the leaks are not repaired, the leaks could present a fire hazard.



**Site Photo 17. Fuel leak at the side of tank**

Power was distributed throughout the building using several distribution panels. SIGIR inspectors opened several of the panels and noted that all covers were in place and circuits appeared adequately labeled.

Electricity was routed through the Humer Kwer Health Center site with underground electric lines. Changes in the conduit direction were achieved through the use of small utility manholes. SIGIR was able to inspect one of the electric manholes. The manholes were raised above grade to prevent surface runoff from entering the manhole. SIGIR noted that the electric lines were placed in PVC conduit as required by the contract; however, the conduit was discontinuous in the manhole.

## Conclusions

According to GRN documentation, authorized GRN KAO personnel conducted a final inspection on 10 May 2009. The final inspection report was written and photographs taken to document the condition of the project. GRN closeout documentation concluded that the work required by this contract was “*...inspected, and is accepted as being in accordance with the contract requirements.*”

On 31 May 2009, the GRN KAO officially turned over the Humer Kwer Health Center project to the Director General of Health. The contractor, a GRN KAO representative, and a representative from the Director General of Health signed a Memorandum for Record stating:

*“This document certifies that all work has been inspected, and is accepted as being in accordance with the contract requirements. Construction at this facility is complete and no other work is to be performed as part of this contract unless noted below.”*

The acceptance letter also noted that the contractor turned over and the Director General of Health received the as-built drawings and O&M manuals.

On 23 August 2009, SIGIR conducted an on-site assessment of the Humer Kwer Health Center project and found that the health center was operational and patients were being seen.

Before the site visit, SIGIR reviewed the design submittals for this project. The GRN KAO provided the contractor with a set of conceptual design drawings and specifications. The contractor reviewed the conceptual design package provided by GRN, and completed the design for the project. The GRN KAO provided SIGIR with the design documents that contained information conveying the scope and intent of the project. The contractor-submitted construction drawings appeared complete, containing information regarding the site development, building structure, architectural layout, utilities, and other project details. SIGIR determined that the Humer Kwer Health Center project was adequately designed.

The design documentation appeared adequate. The site visit identified some issues such as using PVC pipe instead of the galvanized iron pipe; fire extinguishers placed on the floor in common hallways; pressurized gas cylinder accessible to the public; no handrail present in the stairway; and a leaking fuel tank. SIGIR concluded that the construction of the Humer Kwer Health Center project was adequate; aside from the issues addressed, the project was operational. At the time of the site visit, the health center had been operational for approximately three months.

## **Recommendations**

SIGIR recommends that Gulf Region District require the contractor to:

1. Install handrails on the staircase.
2. Secure the fire extinguishers and the pressurized gas cylinder.
3. Fix the leaking fuel tank.

## **Management Comments**

SIGIR received United States Forces-Iraq (USF-I) approved comments from the Gulf Region District on the draft of this report generally agreeing with the facts presented, concurring with the recommendations, and noting that corrective action had been taken or was in progress. The complete texts of the comments are provided in Appendix C.

## **Evaluation of Management Comments**

SIGIR appreciates the concurrence by USF-I and GRD with the recommendations as well as GRD's prompt corrective actions. As a result, no additional comments are required.

## **Appendix A. Scope and Methodology**

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SIGIR performed this project assessment from August 2009 through March 2010 in accordance with the Quality Standards for Inspections issued by the Council of Inspectors General on Integrity and Efficiency. The assessment team included an engineer/inspector and two auditors/inspectors.

In performing this Project Assessment SIGIR:

- Reviewed documentation to include the following: contract W917BE-08-C-0045, contract amendments and/or modifications, Statement of Work, Bill of Quantities, Notice to Proceed;
- Reviewed the design package (plans) and submittals, and final set of revised drawings;
- Reviewed contractor quality control reports and photographs and government quality assurance reports and photographs;
- Reviewed final punch lists, Letter of Acceptance; and
- Conducted an on-site assessment on 23 August 2009 and documented the results of the Humer Kwer Health Center project in Sulaymaniyah, Iraq.

**Scope Limitation.** The time allotted for the Humer Kwer Health Center project site assessment was approximately 90 minutes. SIGIR was able to review areas for a representative sample of the overall project. Consequently, a complete review of all the work at the project site was not possible.

## **Appendix B. Acronyms**

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CMU	Concrete Masonry Unit
GRC	Gulf Region District Central
GRD	Gulf Region Division
GRN	Gulf Region District North
GRS	Gulf Region District South
KAO	Kirkuk Area Office
m <sup>2</sup>	Square Meter
O&M	Operations and Maintenance
PVC	Polyvinyl Chloride
SIGIR	Special Inspector General for Iraq Reconstruction
SOW	Statement of Work
USACE	U.S. Army Corps of Engineers
USF-I	United States Forces-Iraq

## Appendix C. USF-I Approved Comments by GRD on the Draft Report



REPLY TO  
ATTENTION OF

CETAG

DEPARTMENT OF THE ARMY  
GULF REGION DISTRICT  
ARMY CORPS OF ENGINEERS  
APO AE 09342



12 April 2010

MEMORANDUM FOR United States Forces - Iraq (J7), APO AE 09342

SUBJECT: Draft SIGIR Audit Report – Humer Kwer Health Center (SIGIR PA-09-186)

1. This memorandum provides the U.S. Army Corps of Engineers, Gulf Region District response to the subject draft audit report.
2. The Gulf Region District reviewed the subject draft report and generally agrees with the facts as presented in the report. Gulf Region District and the Resident Office have provided additional comments for clarity and accuracy in the enclosure.
3. Thank you for the opportunity to review the draft report and provide written comments for incorporation in the final report.
4. If you have any questions, please contact Robert Jones at (540) 678-2996 or via email [Robert.A.Jones@usace.army.mil](mailto:Robert.A.Jones@usace.army.mil).

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## **Appendix C. USF-I Approved Comments by GRD on the Draft Report**

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**GULF REGION DISTRICT  
COMMAND REPLY**  
to  
**SIGIR Draft Audit Report – Humer Kwer Health Center  
(SIGIR Project PA 09-186)**

**Recommendation.** SIGIR recommends that Gulf Region District require the contractor to:

1. Install handrails on the staircase.
2. Secure the fire extinguishers and the pressurized gas cylinder.
3. Fix the leaking fuel tank.

**Response:** Concur. The Gulf Region District Resident Office that executed the project reported that the fuel leak was repaired after SIGIR identified the leak during its site visit in August 2009. After SIGIR issued the Humer Kwer Health Center draft report, the Resident Office contacted the contractor and informed him of the additional deficiencies. The contractor agreed to install the hand rails and secure the fire extinguishers and pressurized gas cylinder. The Resident Office reported those deficiencies should be addressed by 16 April 2010.

## **Appendix D. Report Distribution**

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### **Department of State**

Secretary of State

    Senior Advisor to the Secretary and Coordinator for Iraq

    Director of U.S. Foreign Assistance/Administrator, U.S. Agency for International Development

        Director, Office of Iraq Reconstruction

    Assistant Secretary for Resource Management/Chief Financial Officer,  
        Bureau of Resource Management

U.S. Ambassador to Iraq

    Director, Iraq Transition Assistance Office

    Mission Director-Iraq, U.S. Agency for International Development

Inspector General, Department of State

### **Department of Defense**

Secretary of Defense

Deputy Secretary of Defense

Under Secretary of Defense (Comptroller)/Chief Financial Officer

    Deputy Chief Financial Officer

    Deputy Comptroller (Program/Budget)

Deputy Assistant Secretary of Defense-Middle East, Office of Policy/International Security Affairs

Inspector General, Department of Defense

Director, Defense Contract Audit Agency

Director, Defense Finance and Accounting Service

Director, Defense Contract Management Agency

### **Department of the Army**

Assistant Secretary of the Army for Acquisition, Logistics, and Technology

    Principal Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology

    Deputy Assistant Secretary of the Army (Policy and Procurement)

    Commanding General, Joint Contracting Command-Iraq/Afghanistan

Assistant Secretary of the Army for Financial Management and Comptroller

    Chief of Engineers and Commander, U.S. Army Corps of Engineers

        Commanding General, Gulf Region Division

        Chief Financial Officer, U.S. Army Corps of Engineers

Auditor General of the Army

### **U.S. Central Command**

Commanding General, Multi-National Force-Iraq

    Commanding General, Multi-National Corps-Iraq

    Commanding General, Multi-National Security Transition Command-Iraq

    Commander, Joint Area Support Group-Central

## **Other Federal Government Organizations**

Director, Office of Management and Budget  
Comptroller General of the United States  
Inspector General, Department of the Treasury  
Inspector General, Department of Commerce  
Inspector General, Department of Health and Human Services  
Inspector General, U.S. Agency for International Development  
President, Overseas Private Investment Corporation  
President, U.S. Institute of Peace

## **Congressional Committees**

### **U.S. Senate**

Senate Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Foreign Relations  
Senate Committee on Homeland Security and Governmental Affairs

### **U.S. House of Representatives**

House Committee on Appropriations  
House Committee on Armed Services  
House Committee on Oversight and Government Reform  
House Committee on Foreign Affairs

## **Appendix E. Project Assessment Team Members**

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

Angelina Johnston

Kevin O'Connor

Shawn Sassaman, P.E.